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Approved For Release 2003/04/17 : CIA-RDP78B05171A000800040044-0

NPIC/TSSG/RED-1935-69

21 November 1969

MEMORANDUM FOR THE RECORD

SUBJECT: CCB Meeting 18-20 November 1969

1. [] mentioned the fact of a source of near east photography we were not aware of--he suggested we check with []
2. We're in the color business (all). The pay off from the last take indicates that the optimistic predictions of color utility are probably correct.
3. Army Ground order of battle resolution studies [] Air Force). Extensive.
4. MTF/OTF Analyzer [] (DDS&T) Advises that camera systems are specified by MTF and offers to make these techniques available to us.
5. Chip System [] performed a chip study five years ago. Also there were many others monitored thru ISCIG.
6. Dry Silver []. Westover has written [] to "stimulate" their delivery of print material--Westover believes foot dragging is going on.
7. Precise Measurement Study [] (NPIC). The need for a PI oriented film distortion study (presumably by []) was reiterated. [] and the CCB concurred that they would support such a study.
8. Improved Resolution Target [] He has supported study by [] in this regard and will make a copy available to us.
9. Color [] has completed a Color Report. Charlie will try to get one for us.
10. Automatic Target Indexing [] (AF). He is interested in a possible add-on order. I gave him [] one year for chinese copy. He is interested in having this capability at [] pointed out that there is a dilemma in the absence of policy for collection program utilization of such a system.

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Excluded from automatic
downgrading and
declassification

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11. Briefing on R&D Program []

- a. Color film processors
- b. Color film dryer
 - (1) Microwave
 - (2) Vacuum
- c. Wide Film Color Processor (70mm - 9.5 inch) 100 ft/min called Spectrum Spray Color Processor
- d. [] Two Station Printer
- e. Flat Bed Printers offer a significant advantage?
They are developing one which gives 570 l/mm minimum resolution over the entire frame.
[] described a simple uniform light source for contact printers (B&W and color) developed at [] He is also convinced that the air gate is a good means for obtaining intimate contact.
- f. [] RS Material
"We conclude that progress to date warrants accelerated development of production capability."

12. Note: The following paragraphs relate to [] briefings given on 19 November 1969.

13. Color Tutorial Session []

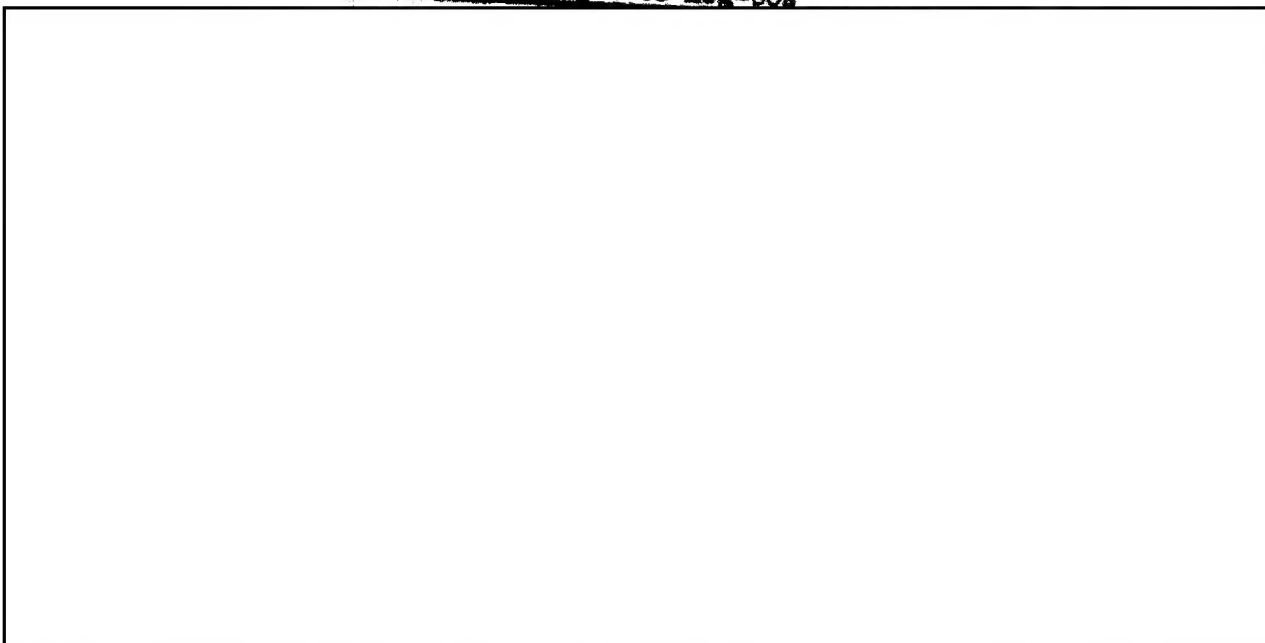
- a. Film types
 - (1) Reversal - Acq. or Dup.
 - (2) Negative - Positive Acq. and/or Dup.
 - (3) Mixed - Reversal/Interneg.
- b. Subjective Evaluation necessary. Cannot be overemphasized.
There is no suitable system for objective evaluation of color film performance at this time.
- c. SO 242 is far superior to every other [] color film for our acquisition systems. Further improvements can be made.
SO 180 is completely inadequate.
- d. SO 242 Color processing speed is 7½ ft/min.
- e. Best Duping Combination
 - (1) 7271 - interneg
 - (2) 7380 - 3rd stage positive
 - (3) 4 ft/min processing rate
 - (4) 6110/6109 dupe materials at NPIC
- f. Approx. 35X maximum enlargement for original (SO 242) positive
- g. Three objectives of present [] color development program

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- (1) High Performance Conventional Color acquisition material
- (2) High Performance IR biased acquisition material
- (3) High Performance Color Duping materials
- f. SO 242 may be changed to neg-pos



15. ☐ Color Equipment Situation ☐

- a. Processors - Current highest speed $7\frac{1}{2}$ fpm
- b. On Order two 1811 Versamats 4 fpm
- c. Under development MP² SO 242 - 8 fpm; SO 360 - 18 fpm
 - (1) ☐ front end, dryer and wind-up
 - (2) 24 processing tanks
 - (3) 18 months away
 - (4) 31-40 feet long
 - (5) First Mod to be at ☐
- d. Color Printers and Enlargers
 - (1) Contact printers 50 fpm (additive vs. subtractive)
 - (2) ☐ Breadboard Enlarger
 - (a) additive exposures 5 min.
 - (b) subtractive exposures 1 min.
 - (3) Development
 - (a) Xenon lamps
 - (b) Improved slit condensing system
 - (c) (Problems of diffuse and specular illumination)
 - (d) Proposed Color Enlarger

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- (e) Contact Printer Development Needed
- (f) Basic Knowledge needed
- e. Color Repro Support Equipment
 - (1) Edge flasher for optical titling
 - (2) Densitometer modifications
 - (3) Color Densitometry in general
 - (4) Color Analyzer
 - (5) Color Viewer Study
 - (6) Production Facility to house this effort.

16. Summary []

- a. Many changes in store
- b. Many unknowns
- c. Very likely change the SO-242 to a neg-pos process
- d. Must be used to stimulate interest

17. Requested a summary report from [] on this color briefing to be delivered before Christmas []

18. Noted the significance of the chip concept to the advent of significant quantities of color []

19. Requested estimates of comparative costs of Color vs. B&W [] answered as follows:

- a. Acquisition: 2 to 1
- b. Reproduction: 5 to 1
(Might be reduced to 3 to 1 by processing SO-242 as a negative)

20. Silver Discussion [] sees no problem. Many inactive mines are reopened as silver price goes up []

22. PAR 176B [] Enlarger, [] . Production Oriented Color

- a. For easing customer duplication
- b. Based on [] printer and the BPE
- c. Light tight housing
- d. Easel rotation
- e. Roll stock reproduction system
- f. Subtractive Illumination System
- g. Rapid Exposure
- h. Simplicity of setting three color numbers the real secret of production orientation.

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- i. 26 months to develop
- j. 5X and/or 10X enlargement?
- k. 11" x 14" size

22. The resolution (200 1/mm) and diagonal 3.8" product = approx. 18,000 cycles the maximum performance of current operational optical systems--a quazi bandwidth figures ()

23. PAR 175B () Video Color Analyzer.

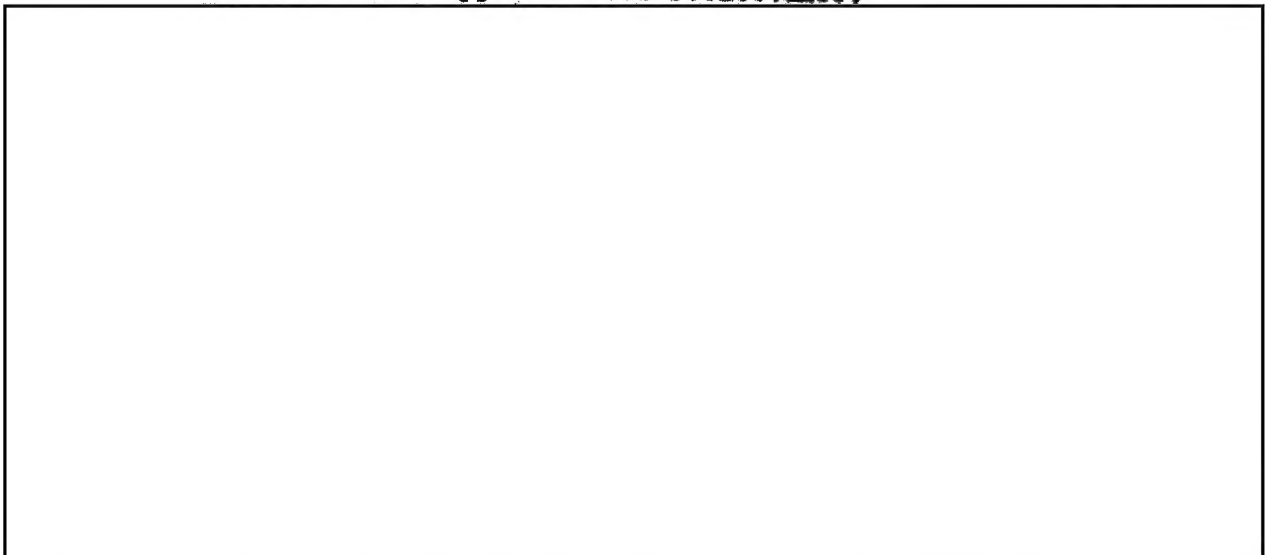
- a. Color densitometry difficulty.
- b. Based on existing equipment marketed by () but produced by () -retail price ()
- c. Modification cost () 23 months.
- d. Kaleidoscope () computer program brought up by () as superior to and obviating the Video Color Analyzer.

24. PAR 177B () Narrow Band Color Viewer

- a. Based on Beer's law.
- b. Apt. Vincent together with ()
- c. () - suggests getting the review performed.

25. PAR 24-0-8S () High Altitude Color Acquisition Criteria. (Real Dot Program)

- a. 350-900 millimicrons
- b. Six Red Dot tests to be scheduled for evaluation of advanced IR emulsion.
- c. Four basic types of soil reflectance.



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(3) [] reports this ink can be obtained in any color

30. PAR 1578/RI [] Contact Printing Distortion

- a. New G terrain camera 5" width UTB
- b. Communication channels

31. PAR 173B [] Automatic Scene Camera.

- a. Evaluation of [] model
- b. Evaluation of [] bench camera
- *c. Check with [] on powerspectrum analysis []
- d. Objective: To bridge gap between processing and exploitation functions. How? To produce identical test materials for evaluation by different elements of the community.
- e. [] Model--arrange for comparison if possible.

32. Declaration of Business Transactions []

- a. Good color report
- b. PAR 176B. Color-Oriented Production Enlarger. Approved for funding.
- c. PAR 175B Video Color Analyzer. Deferred for further study--demonstrate concept.
- *d. PAR 177S (NPIC). Narrow Band Color Viewer. Deferred pending inputs from NPIC.
- e. PAR 24-O-88. Study of Characteristics, etc. Approved for funding.
- f. PAR 173B. Automatic Scene Camera. Approved for funding.

33. Next Meeting [] Mid-February on West Coast.

34. Precise Measurement Study Briefing. [] NPIC/PSG/PHD)

- a. [] concerned about the utility and coordination of the various mensuration studies.
- b. [] indicated that RED is aware of and accomplishing this coordination.
- c. [] was again reminded of the need for further emulsion distortion analysis specifically related to the short dimensions characteristic of NPIC operations.

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25X1 35. Liquid Gate Contact Printing to Remove Artifacts - []
rings, scratches, dirt, etc. [] NPIC/TSSG/APSD).

- 25X1 a. Modified [] Printer with Liquid Gate reproduces
imagery and removes most of the artifacts normally
experienced.
- 25X1 b. NPIC is not particularly concerned about the presence of
these artifacts.
- c. These artifacts may cause serious problems on the Automatic
Target Indexing Device.

25X1 36. Effects of Dual Gamma Processing on Mensuration (of small
images) ([] NPIC/TSSG/RED).

- 25X1 a. Summarized the [] Draft Final Report on Project 6680
as follows: Study indicates there is not significant
difference in mensuration caused by dual gamma processing.
- 25X1 b. [] very preliminary evaluation of the study is that
it is not conclusive.

25X1 37. Color Image Assessment Briefing. []
[]

[]
Special Assistant for Plans & Applications,
RED

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(24 November 1969)

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